CMPT 1011: Introduction to Computing
Course Syllabus

Course Name: Introduction to Computing

Section Number: A01-H01 **Term:** Winter 2024

Course Start Date: January 8, 2024 **Course End Date:** April 26, 2024

Delivery Mode: In-person/Blended

Class Day, Time, Location: Tues, 2:00-3:30, SCFL-4-013 & Thurs, 2:00-3:30, SCFL-4-013

Lab Day, Time, Location: Fri, 8:00pm-11:00am, SCFL-4-013

Instructor Name: Palwasha Afsar

Office Location: By Appointment

Office Hours: Mon, 02:00-03:00 & Thurs, 12:30-01:30

Contact Information: Palwasha.Afsar@norquest.ca

Faculty: Faculty of Business, Environment, and Technology

Department
- Technology

Program: Machine Learning Analyst

Note: This syllabus is tentative and may be subject to change by the instructor if required.

Official College Calendar Description:

This course introduces learners to fundamental concepts in computing science, including logic, algorithms and their properties, and control constructs of sequence, selection, and repetition. Students will learn the basics of data, including types and representation, and will learn to do some computing using simple programming languages. The elementary computing and data theories in this course can be applied to a wide range of careers and industries.

Credits: 3

Prerequisites: None

Co-Requisites: None

Total Course Hours: 81 hrs

Course Goals/General Learning Outcomes:

Upon successful completion of this course, students will be able to

1. Explain fundamental concepts in computing science.
2. Define programming to solve problems.
3. Examine different data types and manipulating variables.
4. Construct the program flow using conditionals and iterations.
5. Organize programs using functions.
6. Apply different data structures in the programming language.

Course Units/Topics:

This course consists of the following units/topics:

1. Introduction to Computing Science
2. Programming for Problem Solving
3. Data Types, Operations and Statements in Python
4. Python Built-in Functions
5. Program Flow Control
6. Define Your Own Functions
7. Strings
8. Lists and Tuples
9. Dictionaries and Sets

Required Textbooks, References, Materials:

- Access to Hyflex
- Class presentations that will be posted on Hyflex
- The Integrated development environment IntelliJ IDEA 2022.2 (Community Edition) https://www.jetbrains.com/idea/download/#section=windows
- Downey, Allen B. (2015). Think Python 2nd Edition. Green https://greenteapress.com/wp/think-python-2e/

Recommended Resources: (Optional)

- Sweigart, A. (2019). Automate the boring stuff with Python. Practical programming for total beginners. 2nd Edition. No Starch Press https://automatetheboringstuff.com/
- Gruppetta, S. (2021). The Python coding book: Understanding what programming really is. https://thepythoncodingbook.com/
- Google for Education. (2015). Google Python class https://developers.google.com/edu/python/
- Bourke, C. (2018). Computer science I. University of Nebraska-Lincoln. https://cse.unl.edu/~cbourke/ComputerScienceOne.pdf

Course Schedule:

Please note that this schedule is subject to change. Any changes or cancellations will be communicated through Moodle. Choose an item

Week	Unit/Topic/Reading	Assessment
Week 1: Jan 9 Lec Jan 11 Lec	**Unit 1: Introduction to Computing Science** • Computer Nostalgia. (n.d.). Computer history. Tracing the history of the computer – history of programming languages. http://www.computernostalgia.net/articles/HistoryofProgrammingLanguages.htm • Learn Computer Science. (2021). Introduction to computer science. https://www.learncomputerscienceonline.com/introduction-to-computer-science/#006b96	
Week 2: Jan 16 Lec Jan 18 Lec	**Unit 2: Programming for Problem Solving** • Analytics Vidhya. (2021, May 26). Introduction to python programming (Beginner's guide). https://www.analyticsvidhya.com/blog/2021/05/introduction-to-python-programming-beginners-guide/ • Downey, Allen B. (2015), Think Python 2nd Edition, Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 1 • Codeacademy. (2021, March 23). How to think like a programmer. https://www.codecademy.com/resources/blog/howto-think-like-a-programmer/ • Coding Tech. (2021, July 27). How to think like a programmer - Learn to solve problems! [Video]. YouTube. https://www.youtube.com/watchv=UiYXwUg23Yw (5:43 min) • Codeacademy. (2019, May 15). How to think like a programmer. [Video]. YouTube. https://www.youtube.com/watchv=rWMuEIcdJP4 (6:15 min)	• Quiz 1- due in class Jan 18, for Hyflex students due by Jan 21 Midnight • Lab assignment 1
Jan 19 Lab		

Week	Unit/Topic/Reading	Assessment
Week 3: Jan 23 Lec Jan 25 Lec	**Unit 3: Data Types, Operations and Statements in Python** • Downey, Allen B. (2015), Think Python 2nd Edition, Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 2 • Cohen, M. X. (2020, October 11). Order of operations in arithmetic (using Python) [Video]. YouTube. https://www.youtube.com/watchv=t7AixVRoo74 (12:44 min) • Runestone Interactive. (2017, December 20). Precedence [Video]. YouTube. https://runestone.academy/runestone/books/published/thinkcspy/SimplePythonData/OrderofOperations.html (6:49 min)	• Quiz 2- due in class Jan 25, for Hyflex students due by Jan 28 Midnight • Lab assignment 2
Jan 26 Lab		
Week 4: Jan 30 Lec Feb 01 Lec	**Unit 4: Python Built-in Functions** • Downey, Allen B. (2015), Think Python 2nd Edition, Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 3 (sections 3.1, 3.2 and 3.3) • Python. (2021). Built-in functions. https://docs.python.org/3/library/functions.html • Mayer, C. (2021). Python's top 29 built-in functions with examples. https://blog.finxter.com/pythons-top-29-built-in- functions-with-examples	• Quiz 3- due in class Feb 01, for Hyflex students due by Feb 4 Midnight • Lab assignment 3
Jan 02 Lab		
Week 5: Feb 6 Lec Feb 8 Lec	**Unit 5: Program Flow Control** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 5 (up to 5.7) Chapter 7	• Quiz 4- due in class Feb 8, for Hyflex students due by Feb 11 Midnight • Lab assignment 4
Feb 9 Lab		

Week	Unit/Topic/Reading	Assessment
Week 6: Feb 13 Lec Feb 15 Lec	**Unit 5: Program Flow Control** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 5 (up to 5.7) Chapter 7	• Quiz 5- due in class Feb 15, for Hyflex students due by Feb 18 Midnight • Lab assignment 5
Feb 16 Lab	No lab (Interim break)	
Week 7: Feb 19 Lec Feb 22 Lec	No class (Interim break) No class (Interim break)	
Feb 20 Lab	No Lab	
Week 8: Feb 27 Lec Feb 29 Lec	**Unit 6: Define Your Own Functions** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 6 Software testing help. (2021, November 29). Python Docstring: Documenting and Introspecting Functions.https://www.softwaretestinghelp.com/pythondocstring-tutorial/	• Quiz 6- due in class Feb 29, for Hyflex students due by Mar 3 Midnight • Lab assignment 6
Mar 01 Lab		
Week 9: Mar 05 Lec Mar 07 Lec	**Unit 7: Strings** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapters 8 and 9 • Goyal, C. (2021, July 18). 10 Useful Python String Functions Every Data Scientist Should Know About! Analytics Vidhya.https://www.analyticsvidhya.com/blog/2021/07/10- useful-python-string-functions-every-data-scientistshould-know-about/	• Quiz 7-due in class Mar 07, for Hyflex students due by Mar 10 Midnight • Lab assignment 7

Week	Unit/Topic/Reading	Assessment
Mar 08 Lab		
Week 10: Mar 12 Lec Mar 14 Lec	**Unit 8: Lists** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python 2e/ Chapters 10	• Quiz 8- due in class Mar 14, for Hyflex students due by Mar 17 Midnight • Lab assignment 8
Mar 15 Lab		
Week 11: Mar 19 Lec Mar 21 Lec	**Unit 8: Tuples** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapters 12	• Quiz 9- due in class Mar 21, for Hyflex students due by Mar 24 • Lab assignment 9
Mar 22 Lab		
Week 12: Mar 26 Lec Mar 28 Lec	**Unit 9: Dictionaries** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 11 • Microsoft Developer. (2020, January 21). Collections | Python for beginners [25 of 44] [Video]. YouTube. https://www.youtube.com/watch?v=beA8IsY3mQs (11:26 min) • Microsoft Developer. (2020, January 21). Demo: Collections | Python for beginners [26 of 44] [Video]. YouTube. https://www.youtube.com/watch?v=4PaSlXNjawM (4:10 min) • James, J. (2015, May 24). Python: Data structures – lists, tuples, sets & dictionaries tutorial l[Video]. YouTube. https://www.youtube.com/watch?v=R-HLU9Fl5ug (19:00 min)	• Midterm Exam(Date to be announced)
Mar 29 Lab	No Lab	

Week	Unit/Topic/Reading	Assessment
Week 13: April 02 Lec April 04 Lec	**Unit 9: Sets** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 19 section 5 • Analytics Vidhya. (2021, Jan 4). Sets in Python.https://medium.com/analytics-vidhya/sets-in- python-9c7ce3e57932	• Quiz 10- due in class April 04, for Hyflex students due by April 07 Midnight • Lab assignment 10
April 05 Lab		
Week 14: April 09 Lec April 11 Lec	**Unit 9: Sets** • Downey, Allen B. (2015). Think Python 2nd Edition. Green Tea Press. https://greenteapress.com/wp/think-python-2e/ Chapter 19 section 5 • Analytics Vidhya. (2021, Jan 4). Sets in Python.https://medium.com/analytics-vidhya/sets-in- python-9c7ce3e57932	
April 12 Lab		
Week 15: April 16 Lec April 18 Lec	**Unit 10: Object Oriented Programming in Python** • Real python, (Sept 11,2023). OOP in Python 3. https://realpython.com/python3-object-oriented-programming/ • GeekforGeeks, (Jan 1,2024). Python OOP concepts. https://www.geeksforgeeks.org/python-oops-concepts/ • Freecodecamp, (Oct 13, 2021). OOP in Python. https://www.youtube.com/watch?v=Ej_02ICOIgs&ab_channel=freeCodeCamp.org	• Coding challenge with Viva- Date to be added
April 19 Lab		

Week	Unit/Topic/Reading	Assessment
Week 16: April 23 Lec April 25 Lec	**Exam week (No classes)**	Final Exam- Date to be added
April 26 Lab	No lab (Exam week)	

Assessments:

Quizzes (10 x 1% each) **Weight:** 10%

- Quizzes will be short questions/programs to review your knowledge of the topics covered that week.

Lab Assignments (10 x 3% each) **Weight:** 30%

- Lab assignments are coding practice for the skills that you are learning in that unit.

Coding Assignment with Viva (1 x 10% each) **Weight:** 10%

- This assignment will include random multiple coding questions with Viva.

Midterm Exam (1 x 20% each) **Weight:** 20%

- This exam will consist of coding challenges and MCQ's or objective type questions to be completed in a specific time frame.

Final Exam (1 x 30% each) **Weight:** 30%

- The final exam will consist of several coding challenges to be completed in a specific timeframe.

Include a statement about the timeframe for when to look for grades after completion of the activities/assessments. E.g.: The instructor will update the online grades typically *X* days after completion of an activity.

How to Submit Assignments:

Submit your assignments to MyClass (Moodle).

Late Assignment Submissions:

Assignments are due on the date and time specified by your instructor. Late assignments may not be accepted after the scheduled due date and time. For a late assignment worth less than 10%, students may contact their instructor for permission to submit **before** it is marked and returned. The instructor's decision will be final. Exceptions to the late assignment policy may be granted only in cases of extenuating circumstances.

For assessments (assignment, quiz, test, project, etc.) worth 10% or more, students may submit a deferred assessment request for approval by the Program Chair (or designate). A deferred

assessment allows a student to either postpone an exam or extend the submission date of coursework due to an unexpected and documented, compassionate and compelling reason, such as (but not limited to) a medical condition, family crisis, and bereavement. Students should send an email with the following information to fbetstudents@norquest.ca within 72 hours after the assessment:

a) Name, Student ID
b) Course Name, Course Code, Section, Instructor
c) Name of Assessment (Mid Term -1, Quiz-1, Assignment – 1 etc.)
d) Original Date of Assessment
e) Reason for missing the assessment
f) Supporting documentation

Final Exam Date and Location: TBD

Bring to Final Exam: TBD

Final exam dates are subject to change. Students are encouraged to check their exam schedule on MyQuest before exams begin.

Attendance Requirements:

For in-person sections, students are expected to attend all classes, labs and exams on campus. All absences should be communicated to your instructor as soon as possible, and students will be responsible for reviewing missed content.

For hyflex sections, students can attend classes and labs in-person, live online, or watch the recordings on their own time. Students are expected to attend exams in-person, please plan accordingly, and speak to your instructor about the specific in-person needs of the course.

Academic Integrity

NorQuest College is committed to maintaining high standards of academic performance and integrity, and it is incumbent upon all members of the college community to uphold these standards. Allegations of academic misconduct are serious and may lead to sanctions such as mark reduction, course failure, or withdrawal from the course or program.

Plagiarism is a form of academic misconduct that occurs when someone presents, as one's own, work that has been created by another. It is a serious offence and can result in suspension or expulsion from the college.

If you are struggling with your course work, including assignments, exams, or other assessments, please reach out to your instructor for support. If you are unsure how to properly cite other work that you refer to or other students you collaborate with, please speak with your instructor.

Allegations of academic or non-academic misconduct will be adjudicated according to Student Judicial Affairs Policy and procedures and may result in sanctions ranging from mark reduction, remediation, course failure, or withdrawal from the course/program. For more information, please talk to your instructor, or contact the Office of Student Judicial Affairs at osja@norquest.ca

Skills of Distinction:

NorQuest College commits to a common set of outcomes we aspire to achieve with each and every learner. We call those Skills of Distinction because they prepare every learner for the challenges of a changing workforce and a changing world. They are the foundation for changing learners' lives for the better. They shape the learning outcomes expected for all programs offered at the college and integrate specific skills essential for all learners such as human skills, creative problem solving, adaptability, and digital fluency. The follow three Skills of Distinction have been established:

1. **Resilience:** Learners are courageous, healthy, and able to respond to or overcome challenges. Through their learning experiences at NorQuest, they become more aware and accountable for their actions.
2. **Inclusion:** Learners value diversity and individuality and base their actions on the principles of social justice. They strive to create safe environments, a sense of belonging and acceptance for themselves and others.
3. **New ways of thinking:** Learners embrace bold new ways of thinking. They are prepared to take risks, keep learning, be creative and take personal responsibility for adapting to changing situations.

Learning Technologies:

This course uses Moodle, NorQuest College's online learning management system, for course materials (http://myclass.norquest.ca). Course materials may include review materials, handouts, course outline, presentations, notices from your instructor, schedule of readings, assignments, and exams. It is important that you log in and review the course materials and information regularly. For technical support, contact Computer Commons: Computer Commons

Technology and Digital Devices:

As this is a technology program, many of the learning activities will require you to use laptops, smartphones, and other digital devices. It is expected that you use these to support your learning and not use them inappropriately or as a distraction to yourself or your classmates. Your instructor will identify times when the use of these devices is not appropriate.

Student Handbook

To support our students' success, we have created a Student Handbook to share all that you need to know to succeed as a student in the Faculty of Business, Environment, and Technology. To maximize your success, read here: FBET Student Handbook

Student Support

Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are advised to discuss their needs with the appropriate representatives through NorQuest College Student Services at (https://norquest.ca/resources-services/student-services/services-for-students-with-disabilities.aspx).

Statement of Expectations

It is the student's responsibility to be familiar with and follow NorQuest College policies and procedures, including the Student Code of Conduct. Student policies can be viewed on the college website at https://www.norquest.ca/resources-services/student-life/student-policies.aspx. Policies specific to a program will be in the student handbook. If you have questions, please ask your instructor or program leadership team to get clarification.

Refer to the official NorQuest Course Outline for additional information about this course and our policies, expectations, and student supports.

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